Guidelines for the VXD Slow-Control User Interface

Report of Intermediate Results

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Belle II

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Contents

Initial Situation

- EPICS + NSM for Slow Control (SC) middleware
- CSS for common user interface

- So far loosely coupled development in sub-groups
- No common look and feel
  (content, navigation, layout, alarms, . . .)

- April 2015: 1st International VXD SC GUI Meeting
  - Preliminary guidelines for content and layout
  - Results may serve as a foundation for a uniform Belle2 SC
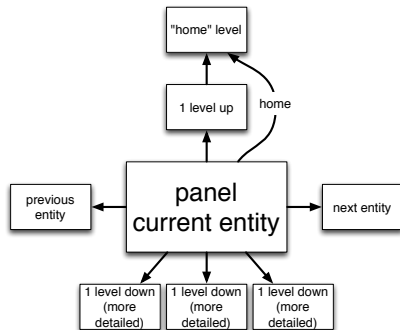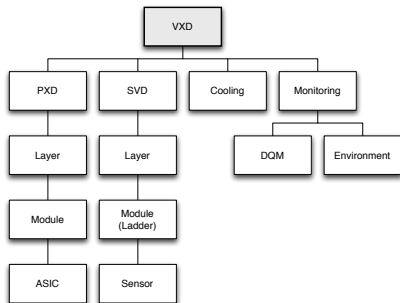
Content Guidelines
Data Representation & Terminology

- Numeric data must be presented together with **units**.
- Units should be chosen to be **directly usable** by the shifters.
- Consider also displaying the **most important value** for plots.
- **Date and time** must be shown in the local time zone (JST).
- Display the system of **detector coordinates** next to images of the detector or parts thereof.
- Always apply the **numbering scheme** when labeling parts.
- All texts must be **short, but still precise**.
- Action buttons must clearly **name the associated action**.
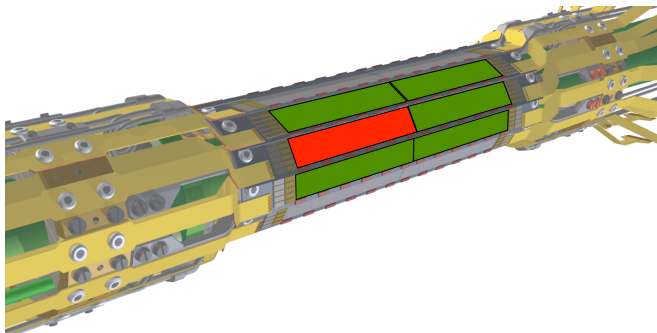- Language is **English only** (panels, documentation, messages).

Content Guidelines
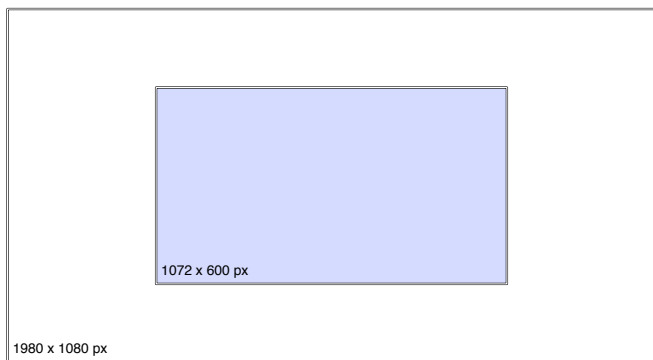## Navigation Tree

Content Guidelines

Graphical Representations

- 3D graphical representation with tree structure where suitable (e.g. root-level, overview-level)
- Differentiate between cause and effect.

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Layout Guidelines
Screen Resolution Considerations
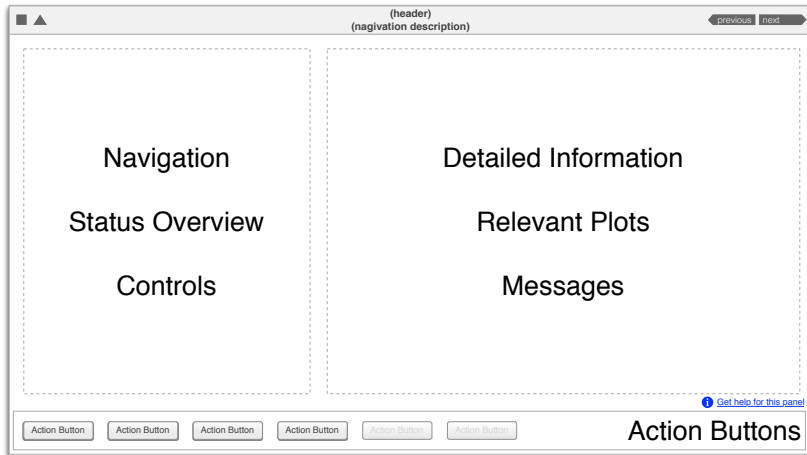

1072 x 600 px

1980 x 1080 px

- Single panel to fit in notebook screen (1072 × 600 pixels)
- Relaxed arrangement for larger display resolutions (HD, 4K)
- Extra space for windows decorations is reserved
- Simultaneous side by side viewing for multiple windows

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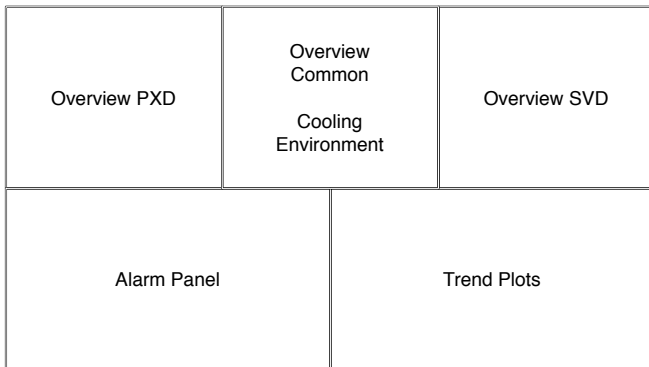
Layout Guidelines

OPI Panel Layout

- Visual appearance (symbolic color schemes, fonts)
- Visualization of alarms

Content Guidelines
Control Room – VXD Overview Screen

Overview PXD	Overview Common Cooling Environment	Overview SVD
Alarm Panel		Trend Plots

- Quick high-level status summary – retrieval at a glance
- Dedicated physical screen

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Deployment and Operation

- Avoid modal (workflow-dictating) dialogs where possible
- Distribution through version control system (e.g. SVN)
- Personalized user accounts and authorization at least for expert mode
- Role based access control:
  "read access" is not restricted,
  "write access" is based on authorization level (session based)
  E.g. actions triggering emergency shutdown, changing low-level values

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Further Steps

- Dedicated guidelines document in preparation
- Reference implementation/structure using CSS + BOY / OPI by PXD and SVD group
- Adaptation of existing user interfaces
- Empirical evaluation during next Testbeam